

## **PROTECTIVE SHOE COVER**

### **FIELD OF THE INVENTION**

5       The invention relates to shoe coverings and particularly to a protective covering for all types of shoes which resists moisture, sand and foreign particles from entering the shoe in the inside of the covering.

### **BACKGROUND OF THE INVENTION**

10       There is a need for individuals who perform activities in difficult terrain (e.g. creek beds) to protect not only their shoes, but their lower legs, ankles and feet from moisture, sand and/or other foreign particles. Previous attempts to perform at least some of these functions suffered from a number of shortcomings.

15       Wheeler, U.S. Patent No. 4,503,566 invention discloses a shoe protector, which offers protection to the lower leg or part of the shoe. The disclosed shoe cover was designed primarily to protect the wearer's legs and/or feet in an industrial environment, such as in a foundry where there is molten material. The cover is formed of a relatively non-flexible material with a zipper, with a strap, and with no flexibility to the wearer. The cover is not designed to be moisture-proof or to keep out foreign material such as sand. The cover protects only the  
20       feet and the ankles. The cover is placed over the top of the shoe or boot.

      Diaz, U.S. Patent No. 5,172,493 describes a shoe case for people working with chain saws or other tools where his lower part of his body may be put in danger by contact with the tool. The shoe cover is made of a woven material and

is held together with a buckle around the back of the ankle. The shoe cover is not moisture proof, but attaches to efficiently keep out foreign particles such as sand.

Falguere, U.S. Patent No. 5,887,359 also discloses a covering for protecting the upper part of a shoe. It employs a zipper to hold the protector together, which may decrease the life of the product due to possible environment corrosion. Zippers are also prone to sticking in an environment that is sandy or muddy eliminating the usage of the protector.

U.S. Patent No. 5,469,637 discloses an adaptable protective legging for protecting motorcycle and bicycle riders from rain and wet roads. Its design does not, however, appear to protect the shoes, ankles and legs from water and sand when fully or partially submerged.

### **BRIEF SUMMARY OF THE INVENTION**

In solving the above problems and making the Sand Guard Protective Shoe Cover is offering a shoe protector that is made of a flexible and waterproof material. A polycarbonate material such as neoprene may be a particularly useful material for this applicant. The cover is formed to fit over the top of a shoe or boot extending up the lower shin and calf and wrapping around these areas. It is held in place by one or more web straps under the arch of the shoe and a fastener (e.g. velcro) running up the edges of the protective shoe cover. Optionally, the web straps may include downward facing protrusion and/or means for removing and attaching such protrusion to the strap (e.g. "soft spikes" as used in golf shoes.).

During outdoor activities, the shoe cover provides a seal that keeps moisture, sand, small stones and debris from entering into the shoes (including the lace and tongue areas) and eliminating irritating the wearer's feet. The Sand Guard Shoe Protector is preferably made of flexible Neoprene, or similar stretchable material, a braided strap and a Velcro fastener. It may be worn during any activity such as, fishing, hiking, camping or canoeing that may introduce moisture or foreign particles into the wearer's shoes. The Shoe Protector also protects one's lower shin, calf, ankle and achilles area from cuts and abrasions caused by contact with foreign objects such as rocks, sticks, coral or grasses.

The option of protrusions or cleats protruding downwardly from the web straps may be useful in a situation where the cover is worn in an environment in which a slippery or muddy condition exist.

The aforementioned and other aspects of the present invention are described in the detailed description and attached illustrations which follow.

### **DESCRIPTION OF DRAWINGS**

1. Figure 1 is a side view of the invention in the assembled form.
2. Figure 2 is the front view of the invention in the assembled form.
3. Figure 3 is a top view of the invention in opened form.
4. Figure 4 is the top view of the invention partially installed in the shoe with opening edges of the shoe cover not connected.
5. Figure 5 is the side view of the invention partially inserted in the shoe with opening edge of the shoe cover not connected.

6. Figure 6 is the top view of a shoe with shoe cover fully installed.
7. Figure 7 is the side view with the shoe and the shoe cover fully installed.
8. Figure 8 is the front view with the shoe cover.

## 5                    **DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Referring first to Fig. 3, there is shown a plan layout of the construction of the protective shoe cover 1 of the present invention. The shoe cover 1 is constructed from a sheet of a flexible waterproof material 30. The material 30 should be one which is highly flexible and isn't much stretchable resistant to tearing. A polycarbonate material such as  
10 neoprene may be a particularly useful material for the shoe guard.

As further shown in Fig. 3, a sheet of the flexible material 30 is cut or formed in a shape such as shown, and has a substantially straight first side edge 20 and a substantially straight second side edge 21. Between the two straight edges 20 and 21 are a curvilinear top edge 9 and a curvilinear bottom edge 11. The first side edge 20 adjoins a first side  
15 connector 24 which may be connected to the shoe cover body 30 by an adhesive, by heat molding or any other convenient means. In a preferred embodiment this first side connector 24 is one side of a velcro fastener. Similarly, the second side edge 21 adjoins a second ankle connector 25 which is fastened by a similar means to the body 30 of the shoe protector. In the embodiment described herein, the second ankle connector 25 is a  
20 strap of Velcro which is complementary to and therefore fastenable to the first side ankle connector 24. The body 30 maybe viewed as comprising several regions as further shown in Fig. 3 a first side flap 22 adjoins the first connector 24; and a second side flap 23 adjoins the second connector 25.

The area between the first side flap 22 and the second side flap 23 is divided into three regions: an ankle portion 6 adjoining the top edge of the body 30; a toe portion 12 adjoining a central portion of the bottom edge 11, and a transition portion 4 located between the ankle portion 6 and the toe portion 12.

5        The shoe cover body 30 is arranged so that its ankle portion 6 will be tightly stretched over the ankle of the user when the shoe cover is assembled. (See Figs. 6, 7 and 8). Similarly, the toe portion 12 will be tightly wrapped over the top of the shoe near the toe when the shoe protector is properly assembled. The transition portion 4 will be tightly stretched over the area which comprises a transition between the ankle and toe of  
10    the shoe when the shoe cover is assembled.

Two or more portions of the body 30 adjoining the bottom edge 11 of the shoe cover body in the top portion region will serve as connection points 7 or web connections for a web 10 which is adapted to slip over the sole of the shoe and stretch the cover body 30 to fit tightly over the ankle. In a preferred embodiment the web connector 7 may be  
15    made of velcro and strips of velcro which will be provided at the ends of the web 10. The web 10 may be constructed with any flexible and yet relatively non stretchable material such as for example rubber or nylon. The portion of the web 10 which connects with the body 30 may be widened (not shown) to provide more even stretching of the material of the body 30. In the preferred embodiment the web 10 is formed of a strip of woven  
20    nylon. Alternatively, the web 10 may be permanently attached to the shoe cover body during manufacturing by means of such, for example as an adhesive or heat molding, but any connecting attachment means may be used.

Figs. 4 and 5 show installation of the shoe protector 1 over a shoe. The web 10 is connected to the body 30 and then the web 10 of the body 30 is slipped over the front part of the shoe. If the web 10 is detachable from the body 30 it may be further tightened at this point. Now, the second side flap 23 is wrapped around the ankle of the user until it overlaps with the first side edge 20. At this point the first ankle connector 24 is assembled to the second ankle connector 25 so that the ankle portion 6 of the shoe protector is stretched to wrap tightly over the ankle and the shin of the user.

Figs. 6, 7 and 8 show that the shoe protector in an assembled form over a shoe. An additional feature of the shoe protector may be the provision of protrusions 8 see Figs 5, 7 and 8, (Items 1 and 2) of the bottom side of the web 10. These protrusions may be permanently assembled to or be an integral part of the web 10 (e.g. when the web is made of molded rubber) or may be connected to the web 10 in manner of screw-in ("spikes") for shoes. Fig. 8 illustrates this method of connecting protrusions 8 to the web 10 by means of protrusion fasteners 28 (e.g. screw-in types).

Although the present invention has been described in various embodiments and the various embodiments have been provided as examples of implementations of the present invention, it should be understood that the present invention is not limited to any particular shape, size, embodiment or configuration. On the contrary, the aspects of the present invention can be embodied in various manners within the scope and spirit of the invention as described herein.